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FACILITATING AIR RIGHTS DEVELOPMENT

A THESIS

Presented to the
Faculty of the Graduate Division
by

Richard R. Lillie

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Master of City Planning

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FACILITATING AIR RIGHTS DEVELOPMENT

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Date Approved by Chairman: 4/15/64

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TABLE OF CONTENTS

ACKNOWLEDGMENTS	Page ii
LIST OF TABLES.	v
LIST OF ILLUSTRATIONS	vi
ABSTRACT.	vii
Chapter	
I. INTRODUCTION.	1
Brief History of Air Rights Development Objective and Method of Thesis	
II. ANALYSIS OF SELECTED EXISTING AIR RIGHTS DEVELOPMENTS . . .	7
Developments Over and Under Railroad Properties	
Penn Center, Philadelphia, Pennsylvania	
Comprehensive Air Rights Development Plan, Chicago, Illinois	
Other Developments Over Railroad Properties	
Developments Over and Under Expressway Rights of Way	
City Hall, Fall River, Massachusetts	
Convention Hall, Detroit, Michigan	
Parking Facilities, Orlando, Florida	
Other Developments Over Expressway Rights of Way	
Developments Over Other Land Areas	
Development Over Streets, Atlanta, Georgia	
Development Over Parking Lots, Cambridge, Massachusetts	
Development Over Buildings, Cleveland, Ohio	
Development Proposal Over Tax-Exempt Land, New York, New York	
Summary	

Chapter	Page
III. THE CITY'S ROLE IN DEVELOPING AIR RIGHTS.	34
Identification of Local Opportunities for Air Rights Development	
Determination of the Need for Enabling Legislation	
Preparation of Illustrative Development Plans	
Analysis of Existing Public Controls	
Determination of Valuation and Tax Assessment of Air Rights	
Summary	
APPENDIX.	56
BIBLIOGRAPHY.	69

LIST OF TABLES

Table	Page
1. Comparative Project Costs for the Fall River, Massachusetts City Hall	20

LIST OF ILLUSTRATIONS

Figure	Page
1. Penn Center Air Rights Development in Philadelphia, Pennsylvania.	10
2. Locations of Air Rights Development in Downtown Chicago, Illinois	12
3. A View of One of the "Oasis" Restaurants Constructed Over the Illinois Tollway System Right of Way.	24
4. A View of Rich's Department Store Shopping Bridge in Downtown Atlanta, Georgia	27
5. A Three-Dimensional Model Taken from a Portion of the Recorded Subdivision Plot for the Prudential Building in Chicago, Illinois.	46

ABSTRACT

Increased population and economic activity in urban areas has created a need for more intensive, effective utilization of land, particularly at strategic locations. One solution to the growing shortage of land is the use of air rights for development.

The right to use, control, or occupy air space above the surface of the land is one right of the "bundle of rights" which is tied to property. Air rights either above or below the surface, may be sold or leased just as minerals, parts, and uses of land below the earth's surface may be sold or leased.

The purpose of this study is to provide the planner with an analysis and evaluation of the available evidence on the use and prospects of air rights for development.

This study presents an analysis of selected, existing and proposed air rights projects over and under railroad and expressway rights of way, and over streets, parking lots, buildings and publicly-owned, tax-exempt land. From this analysis, the major benefits and limitations of air rights development are identified. This study points out the basic factors which should be considered by the city in encouraging air rights development.

Air rights development includes both private and public activity. The analysis reveals that most air rights developments have occurred over railroad properties. During the past few years, however, there has been increasing activity over expressway and street rights of way,

parking lots and buildings. There are also proposals to use air space over publicly-owned, tax-exempt land.

The city should undertake certain basic studies which will provide information about the potential for air rights development and methods which can be used by the city to facilitate and control development. These studies include: (1) identification of local opportunities for air rights development; (2) determination of the need for enabling legislation; (3) preparation of illustrative development plans; (4) analysis of existing public controls; and (5) determination of valuation and assessment of air rights.

Using these studies, the city should make every effort to stimulate future air rights development which will be in the best interests of the city, of the developer, and of the landowner.

CHAPTER I

INTRODUCTION

Land is a valuable commodity and one which is becoming more and more costly--particularly in the urban areas to which the bulk of our population, commerce and industry is being drawn. By 1980, three out of every four persons will be living within urban areas occupying only about two per cent of the nation's land area. To provide for this increase in population and economic activity, cities should begin to plan for more intensive, efficient utilization of land at strategic locations.

One solution to the shortage of land and the need for more effective utilization of land is the use of air rights for development. The use of air rights permits double-duty land development, or development of one land use over another in a piggy-back arrangement. One definition of air rights often used by realtors and appraisers is, "The ownership of the right to use, control, or occupy the air space over a designated property above a specified elevation in relation to the earth's surface at that point."¹

The right to use, control, or occupy air space is one of the "bundle of rights" which is tied to property. A landowner may sell or lease the space above the surface of his land, just as he may sell the minerals and parts and uses of the land lying on or below the earth's surface.

The use of air rights for development provides flexibility and a new dimension to urban planning and development--particularly in the preparation of plans involving the location of new facilities in heavily developed areas. The potential economic and aesthetic benefits from the use of air rights are such that it behooves the planner engaged, or likely to be engaged, in planning for large cities to become familiar with the air rights concept and the prospects for its future development.

Numerous problems accompany the employment of air rights. Among them are high development costs and the necessity of permitting the continued operation of ground uses during construction. While air rights development may involve extra cost and construction problems, real estate investors believe the higher rental income from up-to-date buildings in prime locations more than compensates for added development effort.

Brief History of Air Rights Development

Historically, it is possible to trace the "air rights idea" back to the thirteenth and fourteenth centuries, when publicly traveled "tradesmen's bridges," like the Old London Bridge and the Ponte Vecchio in Florence had buildings constructed upon them for business, residence and public purposes. These bridges, with the added buildings, built over a public water course, were early examples of commercial air rights usage as it is known today.

Railroads made use of air rights as early as 1863 when the Pennsylvania Railroad constructed the Panhandle Tunnel in Pittsburgh.²

This tunnel, and several others that were built during the same period, was constructed in an open cut, then backfilled to the level of the top of the cut. The land surface created over the tunnel was then sold by the railroad for building purposes. The railroad reserved an easement covering the tunnel structure.

Little use was made of air rights between 1863 and 1900. During this time development was carried out by railroad companies who used the air space for their own terminal needs. It was inevitable that real estate developers and others interested in centrally located land would begin to investigate the vast railroad acreages surrounded by high-density development and would begin to question the economy of having a less intensive ground surface use prevent the full development of such prime locations.

The turning point in the use of air rights, and the recognition that railroad areas could be developed more intensively, occurred with the New York Central Terminal Air Rights Development in New York City just after the turn of the century.³ At that time, what is now Park Avenue and the blocks facing it from Grand Central Terminal at 42nd Street to 49th Street were open railroad yards. At 49th Street the tracks converged and entered a tunnel which extended northward for about three miles. The concentration of smoke and steam from coal-burning locomotives in the tunnel created a health and safety hazard to railroad passengers. This condition resulted in an order by the New York Legislature, in 1902, to the railroads to convert their passenger service to electric engines. This legislative order gave the New York Central officials the idea of putting the railroad yards

underground and of leasing the air space above the tracks to private developers.

The New York Central development, following the decision by officials to lease the railroad's air rights, introduced into the system of railroad economics a new use of railroad property; namely, that of air rights over railroad tracks and facilities.⁴ The New York development, the first of its kind, had sufficient dramatic value to be considered the beginning of a new period in the utilization of railroad properties.

During the past 60 years air rights development has been confined largely to construction over railroad properties. However, recent activity shows that the use of air rights is now related more broadly to a wider range of "surface" areas. The ever-increasing conversion of land to expressways and parking facilities has provided increased pressures on the city, on developers, and on landowners to use the air space over these areas for development. Air space over city streets, particularly in the central areas, is also becoming more attractive to prospective developers because of the growing shortage of available space for new construction.

Whereas air rights development has historically been considered as development above surface, recent activity has shown that it may also be considered as development below surface. Such development might include, for example, parking facilities under an elevated expressway or a subsurface parking garage. In this case, the location of the "layer of air space" has changed from above surface to below surface, but the opportunities for development and the potential for greater utilization

of under-developed space have not changed.

The history of air rights development has been relatively short but it has contributed outstanding urban development in the United States. Some of the principal developments include:

<u>New York</u>	
Grand Central Terminal Development	1908
Park Avenue Development	1913
Central Post Office	1930
Pan Am Building	1963
 <u>Chicago</u>	
Union Station	1927
Chicago Daily News Building	1929
Merchandise Mart	1929
Main Post Office	1931
Prudential Building	1955
Marina City	1963
 <u>Cleveland</u>	
Union Terminal Development	1930

Air rights as a form of interest in real estate is not, then, a new concept of land development. It is one which has been used for many years in situations where the potential value of land was too great to limit it to use of the ground surface or to buildings or other improvements limited in height.

Objective and Method of Thesis

This study was undertaken to provide the planner with an analysis and evaluation of the available evidence on the use and prospects of air space development. The control of transportation rights through air space by planes is not included in this study.

The information for the study was obtained from studies by, and correspondence with, the Bureau of Public Roads, planning agencies, developers, and consultants who have been involved in air rights development, from a review of available reports and other pertinent literature on the subject of air rights, and from personal interviews.

Chapter II examines selected, existing air rights projects which have been located over and under railroad properties, expressways, and other land areas. It also identifies, in summary, the major benefits and limitations of air rights development realized by the city, by the developer, and by the landowner. Chapter III presents the city's role in the development of air rights.

CHAPTER II

ANALYSIS OF SELECTED EXISTING AIR RIGHTS DEVELOPMENT

The importance of air space in urban development is vividly demonstrated in the central areas of our major cities. Here, with concentrations of commercial, office, and governmental activities within a limited land area, location of new buildings takes on great importance. Prime locations for conventional development are not always available. However, opportunities for air rights development can usually be found at prime locations in all of our major cities. These include air spaces over and under railroad, expressway, street and alley rights of way, and over parking lots and other surface areas or low-lying, less intensive land uses.

This chapter presents an examination of selected, existing air rights projects involving the situations described above with special consideration also to air rights development over existing buildings and tax-exempt land. It also includes, in summary, the major benefits and limitations that are realized by the city, by the developer, and by the landowner from the development of air rights.

Developments Over and Under Railroad Properties

Railroad properties have experienced the greatest number of air rights developments to date. The reasons are obvious: (1) sizable tracts of railroad property are located in or close to the central areas of our larger cities where demand for land is high; and (2) rail-

roads, in seeking additional income, have made these air rights available to developers. In 1955, for example, over 95 per cent of all air rights transactions, developments, and appraisals in Chicago, one of the country's most active cities in air rights development, were over railroad properties.⁵

Air rights development over railroads has predominantly involved construction of individual buildings over small areas--usually less than five acres--of track right of way. Examples include the Merchandise Mart, the Prudential Building, and the twin-towered Marina City in Chicago. The Pan Am Building in New York, the world's largest commercial office building, is built over only three acres of railroad property.⁶

Air space under elevated railroad tracks has not often been used. In instances where trackage is carried above grade, railroads have generally used or leased the sub air space for parking or storage.

Large, multi-acre air rights developments, particularly in our larger cities, are increasing. The first project of this type was the 45-acre Grand Central Terminal development in New York City in 1908. Two outstanding developments are currently under construction. These are Penn Center in Philadelphia and the development in the air space over the Illinois Central Railroad tracks in Chicago. Facts about the Philadelphia and Chicago projects will be examined in the following pages with particular emphasis on the specific benefits and limitations of these developments. Air space proposals in Pittsburgh, Atlanta, and New York City will also be discussed briefly.

Penn Center, Philadelphia, Pennsylvania

In 1952 the Pennsylvania Railroad and the City of Philadelphia undertook jointly the removal of the Broad Street Station and the famous "Chinese Wall" that carried the railroad yards above the level of the surrounding land to the very heart of the City.⁷ The railroad facilities were placed underground. The removal of the station and the "Chinese Wall" from the surface opened up 14 acres of downtown land for reuse. (See Figure 1 on page 10.)

The redevelopment of the area--now known as Penn Center--was coordinated with an adjacent urban redevelopment project. Future land use was designated primarily as commercial with some small areas set aside for institutional development.

Although the railroad retained title to the land, the City took an active part in determining how the land would be reused.⁸ The Philadelphia Planning Commission was an important element in the success of the redevelopment of the area. The Commission was able to achieve a detailed architectural and economic solution through studies and models which not only illustrated that the project would be profitable to private enterprise but would also make Philadelphia a better functioning city.⁹

Penn Center is an excellent example of air rights development planning. Between the transportation lines on the lowest level and the buildings on the surface is a 14-acre, underground shopping concourse for the thousands of mass transit passengers using the Center every day. This underground area has modern, air-conditioned retail shops, landscaped garden courts, and a skating rink open to the sky for



Figure 1. Penn Center Air Rights Development in Philadelphia, Pennsylvania

winter recreation. The skating rink area is transformed into an outdoor cafe during the summer. Above the concourse is an open-air plaza which extends the length of the three-block development. The plaza serves as an open-air market, a beautiful city square, and a link connecting the various transportation concourses. The purpose of the plaza is to encourage as much pedestrian traffic as possible along its entire length.

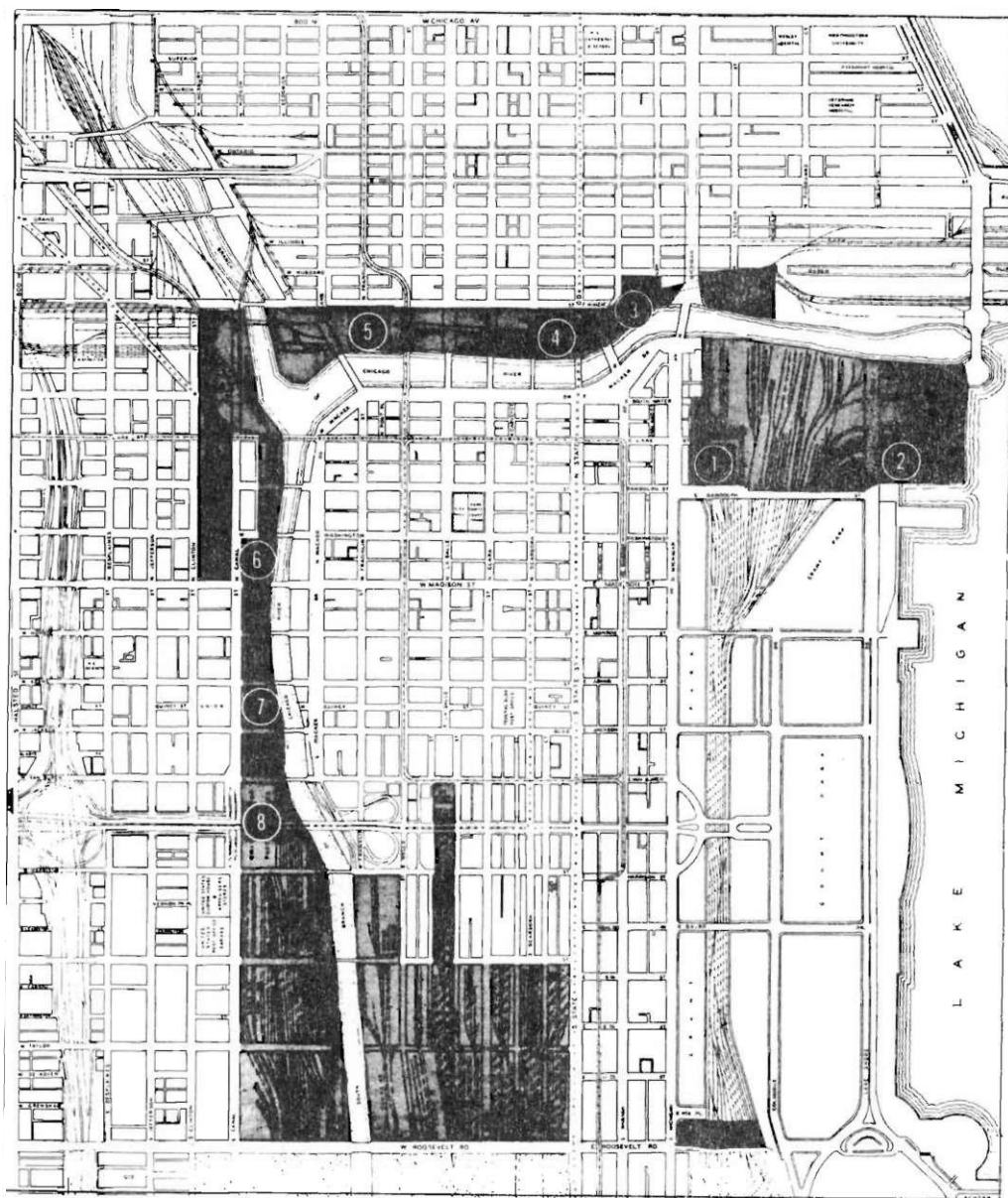
Rising above the plaza are two 20-story office buildings, an 18-story office building, a 1,000-room hotel, and a transportation center combining an underground bus terminal and a four-story parking garage. Committed for development are two apartment buildings.¹⁰

It was estimated that by 1962 over \$100 million had been invested in the Penn Center project.¹¹ The generative force of this investment is beginning to be felt on the surrounding properties. A significant result of the development is that the attraction of new central business district activities to the Penn Center area has been equal to construction within the boundaries of the project itself.¹²

Comprehensive Air Rights Development Plan, Chicago, Illinois

There has been considerable development of air rights above railroad tracks in Chicago. (See Figure 2 on page 12.) Past development has included some of the city's and the country's most impressive buildings. However, the proposed air rights development over the Illinois Central tracks along the shore of Lake Michigan promises to be one of the outstanding urban developments in the country.

The highly attractive, central location of the Illinois Central property has created a demand for development. The 60-acre area is



(1) The Prudential Building; (2) Outer Drive East Apartments (Jupiter Corporation); (3) Chicago Sun-Times Building; (4) Marina City; (5) Chicago Merchandise Mart; (6) The Old Chicago Daily News Building; (7) Chicago Union Station; (8) Chicago Main Post Office.

Figure 2. Locations of Air Rights Development in Downtown Chicago, Illinois

bordered by the three most interesting natural features of downtown Chicago: Lake Michigan, the Chicago River, and Grant Park. Furthermore, it joins the dominant man-made feature of the Chicago region--the Loop.

Several investors had indicated interest in development of air rights over small portions of this area but a number of problems prevented actual construction. The major problems were the lack of water and sewers and private utilities to serve individual building demands.¹³ Because of these problems and because of the strategic location of the railroad property, it was evident that an overall plan was needed to guide the orderly development of the entire air rights area. Potential developers, the Illinois Central officials, and the City were all in agreement that an overall plan was necessary.

The 1958 "Development Plan for the Central Area of Chicago," proposed that the air rights along the lakeshore be developed for both commercial and residential use.¹⁴ The Department of City Planning was directed by the Mayor in 1960 to prepare a preliminary plan and to work with city departments, developers, and the Illinois Central Railroad to expedite development.¹⁵

The Planning Department established the following major objectives for the preliminary physical plan for the area:

1. to include a mixture of principal land uses, consisting of residential units, offices, and commercial activities;
2. to provide for reasonably high residential densities, because of the advantages of location and the constraints of economic feasibility; and
3. to support and augment the principal land uses with necessary services and facilities.¹⁶

A working model was developed which was intended to serve as a basis for more detailed planning. This general proposal provided for a development of a working and living environment for more than 30,000 people. The cost was estimated to be \$1 billion over a period of approximately 15 years.¹⁷

An unusual feature of the preliminary plan was the utilization of a six-story base separating pedestrian and vehicular traffic. The ground level would continue to be used for railroad operations. Other levels would be used for parking, vehicular traffic and roadway access to serve the multi-building complex. The top level of the six-story base would be developed as a plaza exclusively for pedestrians. Residential and office towers would rise from the top of the plaza platform.

The entire 60-acre complex, when completed, will be an extension of the Loop to Lake Michigan. It will provide housing, employment, recreation, education, and service facilities for residents and employees.

The project will offer four significant benefits to the City of Chicago.

1. Approximately \$12 million in real estate taxes will be realized from land which presently yields no taxes.¹⁸
2. The project will have locational advantages for residents and employees.
3. The project will be an added stimulus to the future growth of the central area of the city.
4. The complex arrangement of public and private utilities and services will be installed above ground level permitting ease of

maintenance, repair and improvement.

Two major building projects have already been started over the Illinois Central property. These are: "Illinois Center" and "Lakefront Plaza." The estimated cost of both projects is over \$300 million. Construction has been completed on two 52-story apartment buildings in the 18-acre "Illinois Center" project.¹⁹ A third building, a 39-story apartment structure, is now under construction. Another 39-story apartment building has been completed in the 2-acre "Lakefront Plaza" project.²⁰ Future proposals for both projects include hotel and office buildings.

Other Developments Over Railroad Properties

Other air rights proposals and developments have involved both public and private interests. Examples include an existing park and a proposed World's Fair site in Atlanta, proposed educational facilities in New York City, and a research center now under construction in Pittsburgh.

1. Plaza Park, a small park developed in a metal basin constructed over a railroad gulch in downtown Atlanta, provides a restful retreat for visitors, shoppers, and downtown employees. More important, however, this park and other commercial and parking structures over the gulch have effectively eliminated the physical division of the central business district once created by the railroad gulch.

2. A 125-acre area adjacent to the Atlanta central business district is being studied locally as a possible site for a future World's Fair. Existing railroad rights of way divide the area into

several subareas. However, preliminary plans recommend the construction of platforms over the railroad facilities to tie the subareas together and permit full use of the entire 125-acre area.²¹

3. New York City's Board of Education plans to build an extension of a municipal college over a railroad right of way in Brooklyn and is considering building a complete 30-acre college campus over a Bronx subway yard.²²

4. A railroad gulch between Carnegie Tech and the University of Pittsburgh in Pittsburgh will be the site of a unique research complex. Ten million square feet of floor space will be used for research facilities and offices. In addition, there will be space for parking, gardens, courts, and terraces. The area's major research centers will be within easy walking distance.²³

Developments Over and Under Expressway Rights of Way

One of the desirable goals of federal and state highway agencies and local planning agencies is the coordination of Interstate and other federal-aid highway construction with mass transportation planning, urban renewal, and community development. These governmental agencies agree that the fullest possible use should be made of all land in congested urban areas. The use of air rights over and under federal-aid highways raises the possibility of highways being more than wide corridors of asphalt and concrete.

Development of expressway air space is a relatively recent idea. Development was first permitted in the Federal-Aid Highway Act of 1956.²⁴ The air space clause in this Act permitted a State or

political subdivision to use the air space for public parking operations only. Between 1956 and 1961 studies were made by the American Association of State Highway Officials for increasing the range of permitted air rights uses. These studies were basic to the 1961 Federal-Aid Highway Act amendment permitting private as well as public use of federal-aid highway air rights.²⁵

Development of air space over and under Interstate and federal-aid highways has tremendous potential, particularly in urban centers. The use of air space provides possible answers to two of the major problems now facing our larger cities: loss of tax revenue and lack of buildable space.

Cities have experienced loss of valuable property from their tax rolls as land is removed for highway rights of way. The use of air space for construction of privately owned buildings would open a new and substantial source of real property taxes to the city.

Many cities, already cramped for space by normal growth, have found their problems compounded by the withdrawal from local use of lands taken and devoted to federal-aid highways. The use of space over and under these highways would mean the recovery of some spaces for public and private development.

As a possible answer to some of these urban problems, the Bureau of Public Roads has developed a policy to help cities and states make more efficient use of this valuable and largely unused asset--the air space over and under expressways.²⁶ The Bureau has also issued regulations to guide State highway departments in developing air space.²⁷ One of the latest ideas to evolve from the Bureau's air rights

policy of encouraging development is the purchase of highway right of way in "limited vertical dimension."²⁸ In the past, the only method used by the Bureau to acquire right of way was acquisition of the fee title to property in "unlimited vertical dimension," or right of way that was open to the sky. The new policy, however, permits the State to acquire only the air rights over or under private or public property for highway purposes. This would leave the ground surface in its present ownership.

This new policy states, in effect, that in special circumstances, the right of way for federal-aid highways may be limited to the space reasonably necessary for its construction and maintenance, subject to appropriate conditions and controls. Such special circumstances might include: (1) where the cost of acquiring urban property is extremely high; and (2) where the normal type of acquisition might have an adverse effect on, or conflict with, current land use, local zoning, development trends, or overall urban planning. In such cases, provision may be made to permit the continued use or development of surface areas.

Two of the first applications approved for limited right of way acquisition illustrate the more common possibilities. In one case the State acquired only the rights for construction of an overhead structure and supporting piers, at an estimated savings in right of way cost of \$250,000. In another case an industrial property being condemned was severed by an elevated highway. During the negotiations the property owner indicated a willingness to reduce his claim for damages if the State would permit limited use of the land under the

highway. The Bureau agreed to the reservation of limited rights to the owner, and an estimated savings of \$50,000 resulted--half of the State's estimate of damages to the entire property.²⁹

The possibilities of "stretching the tax dollar" by using air rights in the development of new thoroughfares should prove very attractive to hard-pressed cities and states.

Public projects dominate existing air rights development over and under expressways. Two of the early public projects that were built over depressed expressways are a city hall in Fall River, Massachusetts, and a convention building in Detroit, Michigan. These developments and the construction of a 942-car municipal parking area in the air space under an elevated expressway in Orlando, Florida, will be discussed in the following pages.

City Hall, Fall River, Massachusetts

A central location was needed for a new city hall in Fall River. However, good conventional sites were scarce. The availability of air rights over a centrally located, depressed expressway presented the City with an opportunity to locate the structure near the center of the city.

A study, conducted by the City's consultants, compared the cost and locational factors of the expressway location and five alternate, conventional sites in the central business district.³⁰ The alternate sites were located near the expressway and on the periphery of the central business district. Table 1 on page 20 reflects the comparison of estimated construction and other development costs between the expressway location (C) and the alternative locations. The consultants

Table 1. Comparative Project Costs for the Fall River, Massachusetts, City Hall³¹

Item	Site A	Site B	Site C*	Site D	Site E-1	Site E-2
Land Cost	\$ 154,300	\$ 142,750	\$	\$ 190,000	\$ 370,400	\$ 370,400
Demolition	18,000	16,000		7,600	30,000	17,000
Deck	374,000	600,000	450,000**	600,000	374,000	374,000
Extra Parking			100,000			
Total Site Cost	\$ 546,300	\$ 758,750	\$ 550,000	\$ 797,600	\$ 774,400	\$ 761,400
Building Cost	2,132,000	2,132,000	2,255,000	2,132,000	2,132,000	1,700,000
Total	\$2,678,300	\$2,890,750	\$2,805,000	\$2,929,600	\$2,906,400	\$2,461,400
Ten Year Tax Loss	154,300	88,400		205,900	334,770	334,770
Total Project Cost	<u>\$2,832,600</u>	<u>\$2,989,150</u>	<u>\$2,805,000</u>	<u>\$3,135,500</u>	<u>\$3,241,170</u>	<u>\$2,796,170</u>

* Expressway air rights location.

** Corrected for area of building over deck.

included in the costs of all sites the cost of constructing a deck over the depressed expressway. The deck would be used as a plaza and would provide continuity to the divided central business district.

Although the estimated total project cost on an air rights site was \$10,000 more than the lowest estimate for an alternative site (Site E-2), the expressway location was recommended. The following reasons were given by the consultants.

1. The land acquisition and clearance costs were eliminated. The elimination of acquisition and clearance costs offset the somewhat higher construction costs encountered in building over the expressway and placed the expressway site on a financial par with the alternate sites.
2. The city would not lose any property taxes.
3. The locational advantages were superior to those of the alternate sites because the City wanted to rebuild the city hall as close as possible to the center of town.
4. The air rights location preserved the continuity of the central business district by covering the open, depressed expressway. The consultants felt that use of the expressway's air space would also encourage new development in the immediate area and would serve as a strong link between the commercial and banking districts of the city.

Convention Hall, Detroit, Michigan

When the City of Detroit decided to locate a convention hall-exhibition building along the waterfront in the Civic Center complex, it was faced with the major planning problem of satisfactory pedestrian access.³² A four-lane, divided expressway had been constructed at ground level and lay between the central business district and the Civic Center. The location of this thoroughfare resulted in a conflict between vehicular and pedestrian traffic.

The solution agreed upon was to depress the expressway and to extend the proposed 100,000 square foot building over the right of way. By doing this pedestrians could approach the Civic Center on a level completely separated from through vehicular traffic. It also made the entrance to the building one block closer to hotels and the central business district.

The safe and attractive approaches provided by developing the air space over the expressway not only served to attract people to the Civic Center, but also stimulated new interest in the whole central business district.

Parking Facilities, Orlando, Florida

Orlando is plagued with the usual problems of inadequate parking at locations convenient to downtown shops and stores. By using space under an elevated section of an Interstate highway, the City has been able to place 942 public off-street parking spaces within two blocks of the central business district.³³

Orlando's business district is the heaviest traffic generator in the county. The many tourists visiting the area contribute to an already overloaded street system. The lack of off-street parking and the routing of through traffic down the main street also add to the congestion.

A possible solution to this problem emerged when the Florida State Road Department decided to locate the Interstate highway adjacent to the central business district only two blocks from the main shopping street. Preliminary plans called for the expressway

to be at ground level with underpasses provided for two cross streets. However, in recognition of the parking problem and after several meetings between city and state officials it was agreed that the expressway would be elevated to permit off-street parking underneath. The decision meant that the city would have to pay the extra cost of elevating the structure--just over \$1.1 million.³⁴ However, this cost was deemed to be slight relative to the potential benefits.

The average cost per stall under the elevated expressway was \$1,200 as compared to an average cost of \$3,700 per stall for other parking facilities located nearby.³⁵ In short, the city would have had to pay three times the actual amount paid for the same number of spaces in a similar location.

Other Developments Over Expressway Rights of Way

Other developments which illustrate the potential of expressway air rights include apartment buildings, restaurants, and park facilities.

1. The Bureau of Public Roads cooperated with the City of New York in 1958 in arranging for the acquisition of land required for the new approaches to the George Washington Bridge. The air rights over the approaches were left to the City for a planned housing development. These expressway air rights were sold at auction by the City for just over \$1 million. Apartment houses have been built to accommodate nearly 1,000 families at an investment of nearly \$19.6 million.³⁶

2. Restaurant facilities over the Illinois Tollway System near Chicago provide a new and different use of air space above expressways.³⁷ Figure 3 on page 24 illustrates one of the restaurants

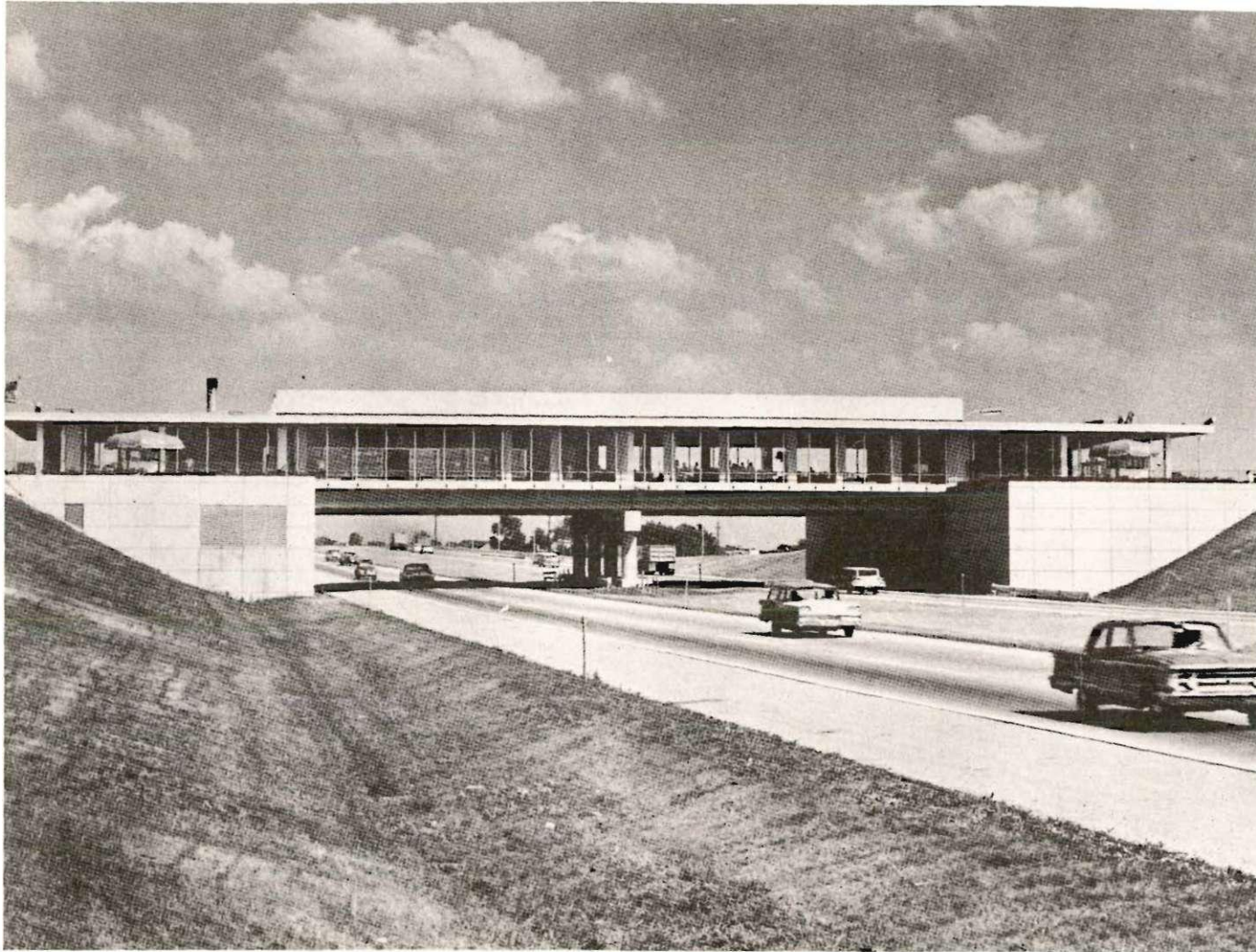


Figure 3. A View of One of the "Oasis" Restaurants Constructed Over the Illinois Tollway System Right of Way

over the Tollway. These facilities benefit from prominent, eye-catching locations while the traveling public benefits from restaurant locations that are convenient and accessible. The restaurants do not have direct access from the moving traffic lanes of the expressway but patrons are able to use exit ramps to convenient nearby parking lots.

3. One link in Hartford, Connecticut's future downtown expressway system is planned through a municipal park.³⁸ The proposed route was chosen because of the existence of intensively developed land in the surrounding area and because the land was publicly owned. Rather than divide the park with a 300-foot, open right of way, the City plans to depress and roof the expressway within the park boundaries.

Developments Over Other Land Areas

Air rights development over and under areas other than railroad properties and expressway rights of way have presented additional opportunities for greater utilization of land. Such areas have included air space over streets and alleys, over existing buildings, over parking lots, and over publicly owned, tax-exempt land.

Development Over Streets, Atlanta, Georgia

One of the major development problems in large cities is the inability to accommodate expansion of business operations at present locations in highly developed central areas. The existence of small blocks is frequently a main reason for this problem. Available space in the same block or in adjacent blocks frequently presents opportunities for expansion but these areas are either separated by other land uses or by public right of way.

A shopping bridge in downtown Atlanta serves as a striking illustration of the use of air rights over a public street to connect newly expanded facilities to an existing building. (See Figure 4 on page 27.) One of the South's largest department stores, user of an entire downtown city block, required room to expand. Horizontal expansion within the block was not possible and vertical expansion was not feasible. Store officials decided to construct a new building on some land in an adjacent block and connect it to the main store by a bridge.³⁹ A narrow, single-floor pedestrian overpass was first conceived, but this initial idea was discarded in favor of a four-story, 30-foot wide bridge which would connect the second through the fifth floors of the existing and the newly constructed building. The bridge is now completed and is used primarily for three functions:

1. as a convenience for customers;
2. as a principal landmark feature in the store's advertising and promotional campaigns; and
3. as a prime display and selling area for the various departments of the store.

The bridge has also been an important asset to downtown Atlanta.

1. It breaks the monotony of what appears to be an endless street and becomes a strong design element in the area.
2. The four-story, glass-walled structure is a distinctive aesthetic improvement to the area.
3. The bridge has relieved vehicular and pedestrian traffic congestion by allowing shopper traffic to

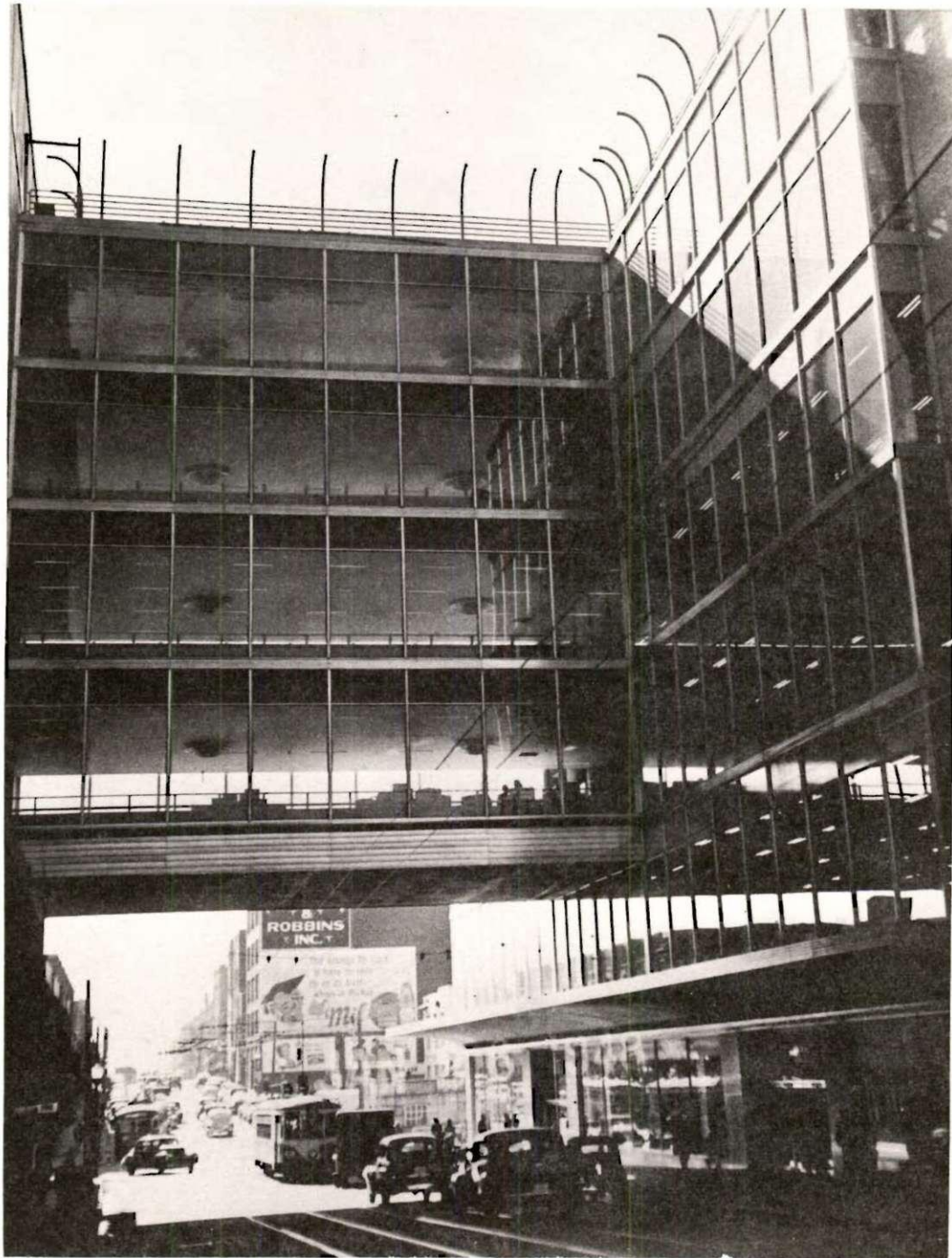


Figure 4. A View of Rich's Department Store Shopping Bridge in Downtown Atlanta, Georgia

pass from building to building on the various levels of the bridge.

Development Over Parking Lots, Cambridge, Massachusetts

Downtown Cambridge, Massachusetts, recently became the location of a new \$500,000 motel over a parking lot.⁴⁰ The fact that a motel is built on columns over a parking area is not, in itself, a new idea. The project becomes different, however, when the land is owned by the city and the air rights are leased for the structure.

A real estate developer looking for a site to locate the motel saw the economic potential for using only the air space above a municipal parking lot and offered the City a price for the air rights. The City accepted the offer for the air rights subject to an easement permitting public parking between 8:00 A.M. and 6:00 P.M. After 6:00 P.M. the parking facilities are reserved for motel guests.

While the project increased the utilization of space in the central business district and provided additional income to the city, several problems resulted from construction over the parking facilities. Some parking space was lost in the course of providing entrances and exits, elevator shafts, and fire stairs. A further impairment of the parking potential occurred because of the difficulty in locating the supporting posts of the new building in a manner that produced an ideal parking pattern below and an ideal building frame above.

Development Over Buildings, Cleveland, Ohio

Private landowners with buildings that are capable of supporting additional construction have also benefited from the lease or sale of

air rights. After the construction of additional stories, the landowner continues to own the complete fee rights in the land and in the lower floors of the building. The developer of the owned or leased air rights has the fee rights in the added upper stories of the building.

One of the first examples of this type of development occurred in Cleveland, Ohio, in 1910.⁴¹ It involved the construction of an additional eight stories in the air space above an existing five-story mercantile building. A lease of 98 years was made to the Cleveland Athletic Club of the air rights above a plane passing through the top of the girders of the fifth floor of the existing building. The now famous "sky lease" also provided the Club with a limited lobby area on the ground floor, basement boiler and machinery quarters, elevator, stairway column shafts, and the other necessary areas to assure access and service facilities for the top eight stories.⁴²

Development Proposal Over Tax-Exempt Land, New York, New York

The use of air rights over publicly owned, and therefore tax-exempt, land provides a potentially significant new solution to the need for space at close-in locations in our larger cities.

As a partial solution to the housing problem in New York City, New York's Governor Rockefeller has advocated the use of air space over subway storage yards, piers, bridge and tunnel entrances, streets, and expressways.⁴³ His study committee on air rights found a number of major advantages in using tax-exempt land for air rights development.

1. There is a significant savings in project costs where "token" rentals, or waiver of rentals from local, state, or federal landowners are in effect.

2. Acquisition and clearance costs are either minimal or wholly lacking.
3. Development would not displace families; therefore no relocation problems exist.
4. Air rights development rising above tax-exempt land would be taxable, thus adding to the City's tax rolls.
5. Development would not displace private, tax-paying property; consequently no tax revenues would be lost to the City.
6. Since public lands and public rights of way are often found at strategic points, locational advantages may result from the use of air rights.
7. The utilization of air rights over tax-exempt land recaptures land for development which had been taken for public purposes.

Summary

The use of air rights presents both benefits and limitations to the city, to the developer, and to the landowner.

Benefits and Limitations to Public Agencies

From the viewpoint of the city, the most far-reaching benefit of air rights development has been the increased tax revenues resulting from new building activity. Chicago's increase of \$12 million in property tax from air rights development is a prime example.

Air rights development has also been used to:

1. facilitate pedestrian and vehicular traffic flow along streets interrupted by railroad, expressway, and other surface areas;
2. relieve the conflict between vehicles and pedestrians;
3. facilitate the location of public and quasi-public uses in intensively developed, high-cost areas; and

4. permit flexibility in maintenance, repair, and improvement of public and private utilities.

Air rights development in the first instance means bridging of open gulches, depressed railroad or expressway rights of way, water courses, or any area which causes an interruption of traffic. The 12 cross-street bridges of the New York Central Railroad development have enabled pedestrian and vehicular traffic to cross over the once formidable 300-foot wide railroad yards. Police and fire equipment is no longer restricted in answering service calls by the barrier of open railroad yards.

The conflict between vehicular and pedestrian traffic is relieved by separating these different forms of movement at crossing points. Chicago's State Street walkway system and the four-story department store bridge over a downtown city street in Atlanta are excellent examples of the benefits derived from separation of these different forms of traffic.

The location of public and quasi-public uses in intensively developed, high-cost areas is less difficult in air space over or under public rights of way. Cost of air rights in these areas is generally waived or occurs as a "token" rental to a public developer. In addition, it is not necessary to demolish existing structures or to relocate families. Fall River's city hall and Detroit's civic center building were examples supporting the benefits of locating public improvement in air space.

The placement of public and private utilities between the ground and the platform supporting the air rights structure allows greater freedom for the operation of the ground use during construc-

tion in the air space. It also permits accessibility for repair and maintenance of the utility.

The city must find answers to new problems which occur with air space development. One of the main problems is that of control. Air rights have been used for nearly all forms of high-density residential, commercial, industrial, and public uses and are, therefore, not unlike conventional developments. The problem, then, becomes one of modification of existing ordinances or adoption of new ordinances to adequately provide for location, spacing, land use, traffic generation, and construction.

A second problem is that of establishing a close, working relationship with governmental agencies, railroads, developers, and others interested in air space development. This relationship is needed to help provide a common bond between public and private interests seeking the accomplishment of a common goal--maximum benefits from air rights development.

Benefits and Limitations to Private Developers

Air rights offer the prospective developer three major benefits: first, a developer contemplating large-scale construction in built-up areas may be able to lease or purchase air space over sizable tracts of land from a single landowner; second, where reasonably priced conventional sites are unavailable at key locations, a developer may find an opportunity to lease or purchase air rights at reasonable prices; and third, air space frequently offers an opportunity to acquire dramatic, eye-catching locations. The Illinois Central

property in Chicago is an outstanding example of all three benefits. Sixty acres of air space were available from one owner, the Illinois Central Railroad. This acreage was adjacent to the intensively developed downtown "Loop" and offered the opportunity of a prominent location along Chicago's famous lakefront.

On the other hand, the prospective developer is confronted with a number of major limitations when using air rights for development.

These are:

1. higher construction costs in comparison with conventional development;
2. complicated engineering, legal, and architectural problems;
3. difficult appraisal problems; and
4. necessity for continuation of ground uses during construction.

Benefits and Limitations to Landowners

From the standpoint of the landowner, the use of air rights provides an opportunity to increase income from real estate holdings. The landowner may be limited, however, in the use of his land because of air rights development. The overhead platform and columns create an inflexible structure which may limit future capacity of the ground use. Overhead construction may also create a need for installation of special facilities to provide artificial light, ventilation, and drainage.

CHAPTER III

THE CITY'S ROLE IN DEVELOPING AIR RIGHTS

Without conscious stimulation or deterrents, future air rights development will continue as it has in the past--as a make-shift method of solving particular development problems. The city has the opportunity, however, to take the initiative and guide the total use of air rights with a program to encourage and stimulate development under proper controls.

A continuous program of air rights study and planning will help to accomplish at least two purposes: (1) it will insure orderly and coordinated development; and (2) it will enable the city to realize more fully the following benefits in addition to those outlined on page 30 of Chapter II. A continuous program of air rights planning will enable the city to:

1. utilize more fully underdeveloped space at key locations in the central area;
2. eliminate or effectively screen uses or land areas which are unsightly, noisy, hazardous, or otherwise incompatible with central area functions;
3. provide a means to achieve new forms of urban design; and
4. derive income from a given piece of publicly owned property through the lease or sale of air rights.

This chapter presents a discussion of factors to be considered by the city in encouraging air rights development. These factors include: (1) identification of local opportunities for air rights development; (2) assessment of the need for legislation; (3) preparation of illustrative development plans; (4) analysis of existing public controls; and (5) determination of the valuation and assessment of air rights.

Identification of Local Opportunities for Air Rights Development

One of the first steps to be taken by the city in determining the local potential for air rights development is an examination of the characteristics that have been important to the development of air rights in other cities. Three main characteristics are evident: (1) large city size; (2) shortage of land, particularly at key locations; and (3) the existence of physical barriers.

City size appears to be a major factor in the amount of air rights development that can be expected to take place. Generally the larger a city the more air rights activity occurs. Atlanta, Boston, Chicago, New York, and other great metropolitan centers are evidence of this general rule of thumb. There are, of course, exceptions where small cities develop pedestrian or vehicle overpasses between buildings or construct a platform over a railroad gulch. However, large-scale development, such as described in Chapter II, occurs primarily in the larger cities.

The shortage of land, particularly in the central areas of large

cities, is a determining factor in air rights development. The elimination of open land and the increase in high-rise construction have increased the potential for air rights developments.

The presence of natural and man-made barriers, particularly in the central areas, also contributes to air rights activity. Barriers such as gulches, waterways, and railroad, expressway, and street rights of way divide compatible land use areas and confine land uses to a limited area, making expansion by normal means difficult.

Upon finding that the city does contain favorable size and physical conditions for air rights development, a general survey should be carried out to indicate the areas where development might best occur. The survey should include the location, by mapping, of areas such as railroad properties, expressway land, public and private off street parking areas, waterways, and public land not mentioned above. The survey should present information such as the following for each area: existing land use; whether the area is elevated, at ground level, or depressed; the nature of surrounding development; and ownership.

If the survey indicates that the city has some areas that are potential air space development locations, local interests should be informed of the city's desire to encourage development under proper controls. Real estate boards, appraisers, potential developers, railroad companies, the Bureau of Public Roads, city departments, and all others interested in air rights should be notified. The city should seek cooperation from these groups in an effort to obtain maximum benefits from air rights development.

Determination of the Need for Enabling Legislation

The city must be concerned with the legal limits within which air rights development can occur. If the proper legal environment is absent, the city must move to create one which will facilitate air rights activity. As with other municipal powers, cities obtain their authority through charter provisions or through general or special state enabling legislation.

General enabling legislation for air rights development is relatively rare at the present time. As of 1960, only two States, New Jersey and Colorado, had enacted legislation recognizing the legality of common law methods of conveying an interest in separate air space.⁴⁴ (Appendix A and B) The power to create estates above the surface of the land is now certain in these States.

Enabling legislation is required mainly in the transfer of publicly-owned air rights. Legislative permission is not necessary for the transfer of air rights between private interests. Most air rights transactions have been between private parties. However, the sale of air rights over public land and over railroad and other surface rights of way is receiving increased attention and the transfer of these rights to private interests may, depending upon individual state law, require state enabling legislation.

A careful review of the state statutes, pertinent court decisions, and the provisions of the local codes and charters with the city attorney or other legal authority is essential.

While limited general enabling legislation exists, there have been a number of special legislative acts passed enabling cities, states,

the federal government, and railroads to engage in air rights transactions. Examples include special legislation in Illinois, Georgia, and Massachusetts.

Two Illinois laws were enacted in the late 1920's during Chicago's most active period of air rights development. A 1927 statute specifically authorized railroads and terminal companies to subdivide the separate levels of air space and sell or lease them.⁴⁵ (Appendix C) The second, a 1929 statute, gave cities the power to lease the air space over streets and other public places.⁴⁶ (Appendix D)

Georgia's experience with air rights legislation occurred in connection with air rights developments over a city street and over a State-owned railroad in Atlanta. The department store, mentioned in Chapter II, was interested in acquiring air rights over a downtown street. Such a sale or lease, however, was not expressly permitted in the municipal charter. In order to permit the development to take place, the City requested the General Assembly of the State of Georgia to amend the city charter.⁴⁷ (Appendix E) A later amendment permitted the City to lease air rights for the construction of overhead passageways provided the structure did not interfere with present or future utility of the street or alley.⁴⁸ (Appendix F)

Legislation permitting the lease of air rights over the State-owned railroad was enacted for the purpose of deriving income for the State.⁴⁹ (Appendix G)

The Commonwealth of Massachusetts, in 1962, passed an act which authorized cities and towns to lease air space above municipal parking lots.⁵⁰ (Appendix H) One of the stated purposes of the act was to

afford tax relief to cities and towns.

Before air rights development can occur over Interstate and other federal-aid highways a city, through the state, must submit a proposal to the Federal Highway Administrator in Washington for approval.⁵¹ One of the requirements of the proposal application is submission of the State's legal authority to use or permit the use of air space. This authority may take several forms. One example is the Commonwealth of Massachusetts' legal authority, as cited in a section of the General Laws of Massachusetts which deals with "Sale of Excess Land" and which provides that:

. . . the Highway Department may sell at public or private sale, or, with the approval of the governor and council, transfer to another department, or to a city, town, or public authority or agency, lease or rent any portion of the lands or rights in land the title to which has been taken.⁵²

Preparation of Illustrative Development Plans

Whenever large-scale, multi-acre air rights developments are proposed at key locations in the city it is the responsibility of the city to actively participate in their planning. The importance of guiding this type of air rights project is the same as guiding the development of large-scale conventional projects. The over-all purpose is to help insure orderly and coordinated development that will be of benefit to the city.

An illustrative plan should attempt to show landowners, prospective developers, and the city government an architectural and economic solution for the proposed development. Factors which should be considered include: (1) development of the multi-acre area as a

unit rather than piecemeal; (2) determination of development objectives, such as types of land use, densities, provision of services and facilities, location and types of open spaces, and off-street parking; and (3) recognition of special development problems, such as intensively used ground spaces.

Agreement of the principle of unit development by the landowner, prospective developers, and the various city departments will mean deriving the most value from a piece of property, more profit to investors, greater tax and aesthetic benefits to the city, and efficient placement of necessary utility services to the whole area.

Analysis of Existing Public Controls

Public control is accomplished through local ordinances such as zoning, subdivision, and code regulations. Other public control devices include tax policy on existing and proposed development, and the Bureau of Public Roads regulations on the use of air space over and under federal-aid highways.

Modification of Local Controls

Provisions for regulation of air rights development are relatively unknown in today's ordinances. A small number of cities that have experienced one or two air rights developments have used provisions within existing ordinances to control development. Three of the larger cities include El Paso, Texas, Omaha, Nebraska, and Philadelphia, Pennsylvania. In cities where development is limited, this procedure may be satisfactory. However, in cities where extensive air rights development is taking place, or likely to take place, modi-

fications of some local controls are necessary.

Zoning Ordinance. The use of zoning as a controlling device for planned air rights development is a relatively recent one. The cities of Chicago and New York were the first to modify existing ordinances to include provisions for air rights. While the amendments differed, the basic reason for their adoption was the same--to insure compatibility between the proposed use and the existing activities and character of the surrounding land.

These modifications are presented, in part, on the following pages. They are presented as two methods used where active air rights development is taking place.

The basis for Chicago's 1962 amendment was the proposed development of the air rights over the 60-acres of Illinois Central's tracks along the lakefront.⁵³ The City considered the development of this area an unprecedented opportunity to encourage planned urban improvement and to discourage piecemeal, unplanned development.

The amendment required a "Planned Development" designation within the existing ordinance for all air rights construction over railroad and expressway land. The "Planned Development," as conceived by the Planning Department, is designed primarily:

. . . for the purpose of utilizing effectively the benefits inherent in large-scale development of land including a more efficient and more economical development pattern, and a more attractive and varied arrangement of structure types and open spaces than is possible under standard regulations for single lots.⁵⁴

The Planning Commission must find that the following conditions exist before a favorable recommendation for the establishment of such

a District can be forwarded to the City Council:

1. that the plan of the area of such development is in conformity with a comprehensive plan of development of adjoining areas having similar characteristics;
2. that the uses to be permitted shall be for the purpose of developing an integrated site plan in conformity with adjoining areas;
3. that the intensity of use to be permitted by such amendment is necessary or desirable and appropriate with respect to the primary purpose of the development and with that of surrounding land use and zoning; and
4. that the uses to be permitted are not of such a nature or so located as to exercise a detrimental influence on the surrounding neighborhood.⁵⁵

The 1962 amendment to the New York zoning ordinance was enacted by the Board of Estimate and concerned the use of air space over railroad and transit rights of way and yards.⁵⁶

The New York amendment gives the City Planning Commission the authority to grant a special permit provided the developer meets the following conditions:

1. that the lot area for such development or enlargement includes only that portion of the right of way or yard which is to be completely covered over by a permanent fireproof platform, unperforated except for such suitably protected openings as may be required for ventilation, drainage, or other necessary purposes;
2. that adequate access to one or more streets is provided;
3. that, considering the size of the proposed development or enlargement, the streets providing access to such use will be adequate to handle increased traffic resulting therefrom;
4. that, from the standpoint of effects upon the character of surrounding areas, the floor area or number of rooms is not unduly concentrated in any portion of such development or enlargement, including any

portion located beyond the boundaries of such railroad or transit air space; and

5. that the lease of air rights must be for at least 50 years in duration with an option to renew for another 25 years.⁵⁷

The Planning Commission may also prescribe appropriate conditions and safeguards to minimize adverse affects on the character of the surrounding property and may require that the structural design of the proposed development make due allowance for changes in the layout of tracks or other structures within the right-of-way or yard.⁵⁸

It is important to note the similarities and differences in these initial attempts to control air rights development through zoning. Both the Chicago amendment and the New York amendment permit air rights development in any zoning district and place emphasis on controlling development so that it is in conformity with the comprehensive plan and with surrounding land uses. Both amendments also require a review of the proposed development by the planning commission.

The amendments differ in two ways: first, Chicago has general provisions requiring an integrated site plan and conformity with surrounding land uses while New York has specific requirements which include structural design and leasing; and second, Chicago's Planning Commission makes a recommendation to the City Council while New York's Planning Commission has the power to issue a special permit.

Subdivision Regulations. The control of the subdivision of air through this type of regulation is still untried. However, with the increasing amount of air rights development, review procedures are possible which would help to ensure the highest quality development.

Review procedures will vary considerably from locality to locality and should be established only after a careful study and review of local conditions. It is possible at this point, however, to include three normal items for review: (1) design standards; (2) the extent and nature of required improvements; and (3) the procedure to be followed in submitting plats for review.⁵⁹

The review of design standards should include the coordination of the project proposals with comprehensive plan proposals and zoning controls in the area. Normal requirements of subdivision regulations relating to design standards are concerned with such matters as street widths and intersections; size and arrangement of blocks and lots; building lines; size, type, and location of utilities; rights of way; easements; and recreational and public areas. Other major requirements are concerned with the construction and installation of improvements. These design factors are applicable to air rights development. However, to achieve maximum opportunity for design, large-scale, multi-acre air rights development should be developed within a "planned development" area under different regulations than those applicable to a "typical" subdivision.

The installation of public improvements does not present a major problem to small air rights projects. Existing public utilities and services need only be extended to these new structures. However, the multi-acre project presents a situation in which the provision of adequate services is a very real problem. Unless the area is pre-planned as a unit utility needs at ultimate development are difficult to estimate.

The City of Chicago solved this problem in its zoning ordinance by requiring proposed air rights areas to be developed as a unit. Under this type of control, the city can project utility needs at full development. Adequate public and private service for the 60-acre Illinois Central project was achieved by acquisition of an easement by the City. Subeasements were then allocated to the utilities and services concerned.

Finally, regulations should contain a section specifying the procedure to be followed by the prospective developer and the public agency during the review process. This step by step procedure should include:

1. preliminary meetings between developer, planning agency, and all other interested private parties and city departments;
2. submittal of a preliminary subdivision plat;
3. submittal of a final plat showing a three-dimensional picture of the air rights to be subdivided, (see Figure 5 on page 46);
4. inspection during and after construction; and
5. follow-up by the planning department on development results.

Building and Construction Codes. The primary function of such codes is to insure that within the city the design and construction of all structures and the installation of all utilities and fixtures are in accordance with established principles and practices in the interest of public safety. Nationally and regionally recognized building and construction standards can be enforced with development of air rights as with conventional construction.

Tax Policy. Tax assessment on local real estate is a definite controlling factor on the ability of existing development to remain and of future development to take place. A high assessment may serve as an economic deterrent causing investors to reinvest in locations with a better tax climate and reducing a city's opportunities for new development. A low assessment may serve as an economic incentive.

In some states the taxing power can be used to facilitate development through tax incentives.* In these States a city may encourage development by relieving the developer of the heavy tax burden, particularly during the period of construction. This type of incentive might mean the difference of thousands of dollars in tax revenue to the city.

Bureau of Public Roads Regulations

Regulations of the Bureau of Public Roads for the development of air space over and under Interstate and other federal-aid highways have been outlined in the Bureau's INSTRUCTIONAL MEMORANDUM 21-3-62, "Use of Airspace on the Interstate System." These regulations are necessarily strict in order to accomplish the goals set for the Interstate System. For each proposal the State must establish, to the satisfaction of the Bureau, that the use of air space will not:

* States offering tax incentives to bring about desired development include: Alabama, Arizona, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Massachusetts, Mississippi, New York, Ohio, Oklahoma, South Carolina, Rhode Island, and Vermont.⁶⁰

1. impair the full use and safety of the highway;
2. require or permit vehicular access to such space directly from the established grade line of the highway;
3. otherwise interfere with the free flow of traffic in the Interstate System; or
4. result in violation of Part 77 of the Regulations of the Administrator, Federal Aviation Agency. (Part 77 refers to building construction or alteration around airports that might be a hazard to air navigation.)

Where a proposal meets the foregoing criteria, it may be approved subject to conditions established to protect the public interest. Twenty-two conditions are outlined in the Bureau's INSTRUCTIONAL MEMORANDUM. Some of the more significant requirements are: (1) a prohibition against the use of federal funds for added costs of highway construction required by an air space structure; (2) clearance limitations for buildings under elevated viaducts or over moving traffic lanes; (3) restrictions on supporting columns, reduction of sight distances of drivers, ventilation, lighting, signing, and aesthetics; (4) code compliance; and (5) a three-dimensional description of the air space to be used.

The regulations give the States the authority to use, or to permit the use of the air space with the approval of the Bureau. Thus, a State could assign air space to other political subdivisions or to private users. The State is also responsible for the disposition of any income resulting from the use of air space and may assign this income to other political subdivisions.

Determination of Valuation and Tax

Assessment of Air Rights

The magnitude of air rights developments makes them of prime concern to cities. Multi-million dollar structures provide large sums of tax revenue, in some cases from land that previously had not produced tax revenue.

Several approaches are used by appraisers to value air rights and air rights structures. These approaches, as well as methods used by the city to assess air rights, are presented on the following pages.

Methods Used in Determining Air Rights Valuation

A guide to the value of air rights is the same as that to the value of every parcel of real property, namely, the degree of anticipated or expected income productivity. The future usefulness provided by the air rights must be adequate to produce income to private enterprise or, it must be adequate to satisfy the site demand of some projected public structure, such as the city hall in Fall River, Massachusetts, or the convention hall in Detroit, Michigan. The price paid for the right to use or control air space is, therefore, an investor's estimate of how much the control of the space is worth to him.

The problem of estimating the value of air rights is, basically, not unlike the problem of appraising any piece of commercial property, or of appraising the site of some public or other non-commercial structure. The appraiser should follow a systematic procedure in attempting to place a dollar value on estimated future usefulness. This procedure should involve: (1) defining the problem; (2) data collection; (3) data computation; (4) correlation of data computations; and (5) the

appraisal report. Step (3) includes three separate, but equal, approaches to value: market approach; cost approach; and income approach. These three approaches are correlated into a final value estimate.⁶¹

The valuation problem begins with the appraisal of air rights only. This is distinguished from the problem of appraising the air rights portion where a building is in existence.

Appraisal of Air Rights. Air rights comprise only a portion of the total rights of the land. Before the value of this portion can be determined, the value of the whole, the complete fee rights, has to be appraised.⁶² The market approach is generally given greater weight than the cost approach or the income approach in determining the value of the complete fee rights in the land. Using this approach, the appraiser obtains sales data of neighboring and comparable land in the area. Comparable sales are analyzed and utilized in formulating an opinion of the square footage values of properties in the area. This analysis will result in an opinion of the fair market value of the complete fee rights in the subject air rights property.

After the value of the complete fee rights has been estimated, the next step in the valuation procedure is to consider a hypothetical structure in the air space over the land.

One such structure may include a platform. The cost and environmental "depressants" involved in constructing a platform are computed for subsequent deduction from the fair market value of the complete fee.⁶³ These factors include:

1. the cost of building the platform;

2. the cost of providing viaducts or other means of access; and

3. the loss of several sticks of the "bundle of rights" of ownership to the owner of the land under the air space platform. (The dollar value of this loss is a matter of appraiser's judgment. In most cases, however, it will be about 5 per cent cent of the value of the complete fee rights.⁶⁴)

The appraiser may also approach the value of the air rights through capitalization of net income less replacement cost of a hypothetical building erected in air space. Analysis should include:

1. a study of the construction costs of the buildings;
2. a study of the total earning expectancy of the building produced by competent management;
3. an estimate of the expected vacancy trend; and
4. an estimate of expenses used in the operation of the building including utilities, administrative expense, taxes and insurance, and maintenance replacement reserve.

Income approach is based on an analysis of future earning power of the property. It rests on the belief that the probable future earning capacity of the property, translated into dollars today, will produce an estimate of market value.⁶⁵

Railroads place a value on their air rights in various ways.⁶⁶ For example, the value of Illinois Central's air rights is based on two considerations: (1) price of comparable vacant land less additional cost of air rights construction, and (2) what the traffic will bear. This valuation takes into consideration the saving of basement excavation and the ability to get two decks of parking below the

viaduct level without loss of rentable space.

The Canadian Pacific Railroad considers five points in the valuation of its air rights: (1) a base rental; (2) taxes; (3) money borrowed; (4) the project manager's know-how; and (5) operating costs.

Mr. James Boisi, New York Central's vice president of real estate, states that the Railroad's air rights are worth, "as much as we can negotiate." The Railroad also gets a percentage rent in addition to a basic rent. Mr. Boisi describes the arrangement as, "an escalation clause by virtue of the lower purchasing power of the dollar."

Appraisal of the Air Rights Structure. The analysis used to arrive at the valuation of an air rights structure is somewhat different than the analysis used for the air rights only. In this instance, the details of the costs to build the structure, or structures, are known. It is possible, therefore, to make an appraisal on the basis of these known construction costs less depreciation.

Certain costs would be saved and certain other costs added in the case of air rights improvement as compared with the same building erected conventionally at ground level.⁶⁷ The major costs saved are: basement excavation, walls, and heating, electrical and plumbing installation, partitions, stairways, and elevator installations to service the basement. The major costs added are: columns, beams, and girders to support the elevated structure, the installation of a structural bottom floor slab, and extra sewerage plumbing costs.

Methods Used in Tax Assessment of Air Rights

A major difficulty in assessing air rights is determining the

proportion of the value of the complete fee in the land that should be assigned to air rights. Cities have had very little experience in air rights valuation and assessment procedures. Interest in this problem has been, primarily, over railroad properties.

In Atlanta, Georgia, for example, no effort is made to tax only air rights. Taxes are only paid on the value of the air rights improvement.⁶⁸

In New York City, assessment of air rights over railroad properties has been established following a long history of air rights negotiation over the New York Central's yards and tracks. The value of air rights, in this instance, represents 80 per cent of the value of the complete fee rights in the land.⁶⁹ The taxes paid by an owner of air rights and of a building constructed in the air space, would, therefore, be based on 80 per cent of the total value of the land, the total value of the building, and the total value of the structure that supported it. The 80-20 ratio, with small variations, proves to be a quite accurate division: (1) where the air rights improvement is a high-rise structure situated in a central business location having the usual layout of blocks and streets, and (2) where a percentage of the streets surrounding the air rights development are required to be in the nature of viaducts.⁷⁰

Most cities do not feel it desirable to tax air rights until development has taken place. Upon finding that air rights development is feasible, or after initial development has taken place, the city should tax air rights to encourage development.

Summary

A new dimension has been added to railroad real estate, public rights of way, and other publicly- and privately-owned, underdeveloped land. This new dimension is height. By subdividing the space over these areas, millions of square feet of new real estate are being created.

Without actively encouraging or discouraging activity, the city may benefit from air rights development. The main benefit cities derive is increased tax revenues from construction of new buildings. However, air rights developments have much more to offer than increased tax revenues and, for that reason, the city should take the lead, where appropriate, in the development of this new found space.

Active encouragement and participation by the city will help insure orderly and coordinated development and realization of air rights development benefits more fully.

In assuming this active role, the city should undertake certain basic studies which will provide information about the potential for air rights development in the city and methods which can be used by the city to facilitate and control development. These studies include:

1. identification of local opportunities for air rights development;
2. determination of the need for enabling legislation;
3. preparation of illustrative development plans;
4. analysis of existing public controls; and
5. determination of valuation and assessment of air rights.

Using these studies the city should make every effort to stimulate future air rights development which will be in the best interests of the city, the developer, and the landowner.

APPENDIX

APPENDIX A

New Jersey Statutes Annotated, Permanent Edition
Title 46, Chapter 3
 "Estates and Interests in Real Property and
 Alienation Thereof in General"

Section 46-3-19. "Estates, Rights and Interests in Areas Above Surface of Ground." p. 53.

Estates, rights and interests in areas above the surface of the ground, whether or not contiguous thereto, may be validly created in persons or corporations other than the owner or owners of the land below such areas, and shall be deemed to be estates, rights and interests in lands.

Section 46-3-22. "Application of Existing Laws to Estates, etc., in Areas Above Surface of Ground." p. 54.

The provisions of this Title and of any other law of this State, shall be applicable to estates, rights and interests created in areas above the surface of the ground and to instruments creating, disposing of or otherwise affecting such estates, rights and interests, wherever such provisions would be applicable to estates, rights and interests in land, or to instruments creating, disposing of or otherwise affecting estates, rights and interests in land.

New Jersey Laws
Chapter 370

"An Act Concerning Areas Above Surface Lands, and
 Supplementing Chapter 3 of Title 46 of the Revised Statutes" 1938

Be it enacted by the Senate and General Assembly of the State of New Jersey:

1. Estates, rights and interests in areas above the surface of the ground, whether or not contiguous thereto, may be validly created in persons or corporations other than the owner or owners of the land below such areas, and shall be deemed to be estates, rights and interests in land.
2. Estates, rights and interests in such areas shall pass by descent and distribution in the same manner as estates, rights and interests in land and may be held, enjoyed, possessed, aliened, conveyed, exchanged, transferred, assigned, demised, released, charged, mortgaged, or otherwise encumbered, devised and bequeathed in the same manner, upon the same conditions and for the same uses and pur-

poses as estates, rights and interests in land, and shall be in all other respects dealt with and treated as estates, rights and interests in land.

3. All of the rights, privileges, incidents, powers, remedies, burdens, duties, liabilities, and restrictions pertaining to estates, rights and interests in land shall appertain and be applicable to such estates, rights and interests in areas above the surface of the ground.
4. The provisions of this Title and of any other law of this State, shall be applicable to estates, rights and interests created in areas above the surface of the ground and to instruments creating, disposing of or otherwise affecting such estates, rights and interests, wherever such provisions would be applicable to estates, rights and interests in land, or to instruments creating, disposing of or otherwise affecting estates, rights and interests in land.

APPENDIX B

Senate Bill No. 66
1953 Colorado Legislature

Section 1. Estates, rights and interests in areas above the surface of the ground, whether or not contiguous thereto, may be validly created in persons or corporations other than the owner or owners of the land below such areas, and shall be deemed to be estates, rights and interests in land.

Section 2. Estates, rights and interests in such areas shall pass by descent and distribution in the same manner as estates, rights and interests in land and may be held, enjoyed, charged, mortgaged or otherwise encumbered, devised and bequeathed in the same manner, upon the same conditions and for the same uses and purposes as estates, rights and interests in land, and shall be in all other respects dealt with and treated as estates, rights and interests in land.

Section 3. All of the rights, privileges, incidents, powers, remedies, burdens, duties, liabilities, and restrictions pertaining to estates, rights and interests in land shall appertain and be applicable to such estates, rights and interests in areas above the surface of the ground.

Section 4. The provision of Chapter 40, 1935 Colorado Statutes Annotated, and any other law of this State, shall be applicable to estates, rights and interests created in areas above the surface of the ground and to instruments creating, disposing of or otherwise affecting such estates, rights and interests, wherever such provisions would be applicable to estates, rights and interests in land, or to instruments creating, disposing of or otherwise affecting estates, rights or interests in land.

Section 5. The provisions of this Act shall be applicable to such estates, rights and interests created in areas above the surface of the ground, whether such estates, rights and interests were heretofore or hereafter created.

Section 6. All acts or parts of acts in conflict herewith are hereby repealed.

APPENDIX C

Laws of Illinois, Fifty-Fifth General Assembly, 1927

"An Act to Increase the Powers of Railroad,
Union Depot, and Terminal Companies"

(Illinois Revised Statutes: 1949, Chapter 114, Paragraph 174a.)

This statute provides that whenever a railroad is the owner in fee of real estate susceptible of other than railroad uses without abandonment of such railroad uses, or different levels or parts thereof, which real estate may be devoted to such other uses without unreasonable impairment of the use of the remainder for railroad purposes or part of the real estate above or under the part needed for railroad operations which may be utilized or developed for buildings or other structures to be used in other businesses, the railroad may improve and develop such real estate and may sell, convey, and lease to others such part or parts thereof as the railroad may at any time elect, providing that the plan of such development and the sale or lease is in each instance approved by the Illinois Commerce Commission and the Commission finds that such use will not unreasonably impair the use of the remainder of the real estate for railroad purposes.

APPENDIX D

Laws of Illinois, Fifty-Sixth General Assembly, 1929
"An Act to Increase the Powers of Cities, Villages and
Incorporated Towns, With Respect to the Leasing of
Property and/or Property Rights," p. 230.

Be it enacted by the People of the State of Illinois, represented in the General Assembly:

Section 1. All cities, villages and incorporated towns in this State are authorized and empowered to lease the space above and/or around buildings located on land owned, or otherwise held, by them respectively to any person, persons or corporation for any term not exceeding ninety-nine (99) years.

Such cities, villages and towns are also authorized and empowered to lease, in the same manner and for similar term or terms, any space over any street, alley or public place, to such person, partnership or corporation as may own the fee or leasehold estate, for a term not less than that of the proposed lease, in the property on both sides of the portion of the street, alley or public place so to be leased, whenever the city council, board of trustees, or other legislative governing body of such city, village or town shall be of the opinion that such space is not needed for street, alley or other public purpose, and that the public interest will be subserved by such leasing.

Section 2. Such lease shall by its terms specify the purpose or purposes for which the leased space may be used. If the purpose is to erect in such space a building above and/or around a building owned by the municipality, the lease shall contain a reasonably accurate description of the building so to be erected and of the manner in which it shall be imposed upon and/or around the existing building of the municipality; and in such case the lease shall also contain a provision granting to the lessor municipality the option of renting for municipal use from the lessee any part or parts of the building so to be erected and stating the terms upon which such option may be exercised as well as the rent which shall, after exercise of such option, be paid by the municipality; the lease shall also, in such case, contain a provision granting the municipality the option to purchase for municipal use the entire structure or building erected or to be erected in the space leased and shall specify the terms upon which such option may be exercised and the price which shall be paid for such building or structure by the municipality in the event it exercises its option to purchase.

Section 3. Any building or structure erected in the space so leased, which shall be above and/or around buildings located on land owned or otherwise held by such city, town or village, shall be operated, as far as practicable, separately and apart from any building owned and/or operated by the municipality, and no liability shall in any manner attach to the municipality by reason of the erection or operation of the structure or building in the space so leased.

Section 4. The leasing of any such space shall be authorized by ordinance passed by the legislative branch of such municipality. In such ordinance the lease and its term shall be set forth with reasonable certainty.

Section 5. The lease shall be signed in the name of the municipality by the mayor or president of the board, as the case may be, and shall be attested by the clerk or the municipality under the corporate seal thereof, and shall also be executed by the lessee or lessees in such manner as may be necessary to bind them, and having been so executed it shall be duly acknowledged and shall thereupon be recorded in the office of the recorder of deeds of the county in which is located the land involved in such lease.

Section 6. Should the public interest, in the judgment of such city council, board of trustees, or other legislative governing body of such city, town or village, require that any building erected on such leased premises be removed so that such street, alley or public place may be restored to its original condition, the lessor corporation may condemn the lessee's interest in said premises so leased thereon by proceeding under the Eminent Domain Act and, after payment of such damages as may be fixed by such proceedings, may remove all buildings or other structures from such demised premises, restoring the buildings adjoining such demised premises to their original condition.

Section 7. The powers herein granted shall not be a limitation upon but shall be additional to any powers heretofore granted to any city, village or incorporated town in this State.

APPENDIX E

Georgia Laws, 1946Part III, Title I

Municipal Corporations, Atlanta Charter Amendment No. 569
"Grant to Rich's, Inc.", p. 322.

The Mayor and General Council shall have the power and authority to grant to Rich's, Inc., the right to erect an overhead passageway across Forsyth Street between Alabama and Hunter Streets, upon such terms and conditions as they may fix, so long as the structure will not interfere with the present or future requirements for public purpose or public utility purposes.

APPENDIX F

Georgia Laws, 1953

Local and Special Acts and Resolutions, Vol. II

Atlanta Charter Amendment No. 112

House Bill No. 220, Sections 1, 2, and 3

"Passageways Over or Under Streets," pp. 2258-59.

Section 1. The governing authorities of said city are hereby authorized to permit the construction, erection, and maintenance of overhead and underground passageways across, over, and under any of the public streets and alleys of the City of Atlanta, upon such terms and conditions as they may determine, so long as the structure or structures shall not interfere with the present or future requirements of said city for public purposes or public utility purposes.

Section 2. A copy of notice of intention to apply for this local legislation and an affidavit showing the publication of such notice as required by law are hereby attached and made a part of this bill, and it is hereby declared that all the requirements of the Constitution of the State of Georgia of 1945 relating to publication of notice of intention to apply for the passage of this local legislation have been complied with for the enactment of this law.

Section 3. All laws and parts of laws in conflict herewith are hereby repealed.

APPENDIX G

Georgia Laws, 1959
No. 393 (House Bill No. 430)
"Western and Atlantic Railroad Commission--
Recommendations to General Assembly"

An Act to authorize the Western and Atlantic Railroad Commission to hear proposals, to consider, to confer with others, and to make recommendations to the General Assembly concerning proposals to lease or to option any non-railroad property under its jurisdiction, provided that no such lease or option shall interfere with the rights of the present lessee of the Western and Atlantic Railroad Commission without its consent; to define non-railroad property; to repeal conflicting laws, and for other purposes.

Be it enacted by the General Assembly of Georgia and it is hereby enacted by the authority of the same as follows:

Section 1: The Western and Atlantic Railroad Commission is hereby authorized to consider, to confer with others, to hear proposals, to discuss and to make recommendations to the General Assembly of Georgia at its regular, 1960 session, concerning proposals to lease or to option any non-railroad property under the jurisdiction of the Western and Atlantic Railroad Commission, for the approval or disapproval of the General Assembly. Any such proposal may recommend an agreement to be entered into with or without competitive bidding, provisions for collateral security for the rent, penalties of forfeiture of the premises on account of default, prohibition against subletting or releasing the premises, notwithstanding any existing law in regard to such provisions. Said Commission is hereby authorized to obtain engineering or other studies or plans respecting any proposed lease or option of said non-railroad property, the results of which plans or studies shall be made available to the State of Georgia. Prior to recommending to the General Assembly for approval any such lease of any interest in any such real property, the Commission shall have three separate appraisals made as to its value. The term, "non-railroad property" as used in this Act included overhead and underground rights and other property not used or necessary for railroad purposes, including property which may not be used nor necessary for railroad purposes because of change in location or facilities.

Section 2. No such proposed agreement shall interfere with the rights of the present lessee of the Western and Atlantic Railroad property without its consent.

Section 3. No such proposed agreement shall in any way be binding on the State of Georgia unless and until it has been approved and authorized by Act or by a Joint Resolution of the House of Representatives and Senate of the State of Georgia.

Section 4. All laws and parts of laws in conflict with this Act are hereby repealed.

APPENDIX H

Acts of the State of Massachusetts, 1962Chapter 796"An Act Authorizing Cities and TownsTo Lease the Space Above Municipal Parking Lots," p. 718.

Whereas, The deferred operation of this act would tend to defeat its purpose, which is to permit forthwith the leasing of airspace above municipal parking lots for the purposes of affording tax relief for cities and towns, therefore it is hereby declared to be an emergency law, necessary for the immediate preservation of the public convenience.

Be it enacted, etc., as follows:

Chapter 40 of the General Laws is hereby amended by inserting after section 22D, added by chapter 322 of the acts of 1961, the following section:

Section 22E. Whenever the board or officer having charge of an off-street parking area or facility owned by a city or town, whether acquired under general or special law and irrespective of the date of acquisition, determines that the whole or any part of the airspace more than fourteen feet above the grade line of such area or facility is not required for off-street parking purposes, such board or officer shall publish once a week for at least three consecutive weeks in a newspaper of general circulation in such city or town an advertisement of such determination, identifying the off-street parking area or facility involved. Such advertisement shall invite sealed proposals for the leasing of such airspace for a term not exceeding ninety-nine years and for the construction of a building therein pursuant to basic drawings and outline specifications to be submitted with such proposal. Such advertisement shall also fix a time, not less than three months after the first publication of such advertisement, and specify a place, at which time and place such board or officer shall publicly open and read such sealed proposals.

Any provision of general or special law to the contrary notwithstanding, the city manager in the case of a city having a Plan D or Plan E charter, when authorized thereto by an affirmative vote of a majority of the city council, the mayor in the case of any other city, when authorized thereto by majority vote of the city council, and selectmen in the case of a town, when authorized thereto by vote of the town at a town meeting, may lease, in accordance with whichever of the proposals so submitted is deemed most advantageous to such city or town, the whole

or any part of the airspace determined as aforesaid to be not required for off-street parking area or facility as may be necessary for structural supports for the building to be erected in such airspace. Buildings and other things erected or affixed pursuant to the lease of any such airspace shall be taxed to the lessee thereof or his assigns in the same manner and to the same extent as if such lessee or his assigns were the owners of the land in fee and the value of the land shall be included in any such assessment.

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59. "You Ought to Know . . .," Railway Age, Vol. 152, May 21, 1962, p. 55.